Audit Report

ACQUISITION MANAGEMENT OF THE GLOBAL TRANSPORTATION NETWORK

Report No. D-2001-168 August 2, 2001

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Acronyms

GTN	Global Transportation Network
USTRANSCOM	U.S. Transportation Command
ASD(C3I)	Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)

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August 2, 2001

MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE (COMMAND, CONTROL, COMMUNICATIONS, AND INTELLIGENCE)
ASSISTANT SECRETARY OF THE AIR FORCE (FINANCIAL MANAGEMENT AND COMPTROLLER)
DIRECTOR, JOINT STAFF
DIRECTOR, U.S. TRANSPORTATION COMMAND

SUBJECT: Audit Report on the Acquisition Management of the Global Transportation Network (Report No. D-2001-168)

We are providing this report for your information and use. Because this report contains no recommendations, no written response to this report was required, and none was received.

We appreciate the courtesies extended to the audit staff. For additional information on this report, please contact Mr. Charles M. Santoni at (703) 604-9051 (DSN 664-9051) (csantoni@dodig.osd.mil) or Mr. David M. Wyte at (703) 604-9027 (DSN 664-9027) (dwyte@dodig.osd.mil). See Appendix C for the report distribution. Audit team members are listed inside the back cover.

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Report No. D-2001-168 **August 2, 2001**
(Project No. D2001AL-0072)

Acquisition Management of the Global Transportation Network

Executive Summary

Introduction. This report discusses the acquisition management of the Global Transportation Network by the U.S. Transportation Command. This report is one in a series of audit reports addressing DoD acquisition management of information technology systems.

The Global Transportation Network is a central database system that augments the business process of the U.S. Transportation Command for managing and controlling in-transit assets. In addition, the Global Transportation Network allows more than 6,000 registered users to monitor movements of resources affecting the readiness of missions. Since achieving initial operating capability in April 1997, the Global Transportation Network processes more than 2 million transactions per day.

The Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) designated the Global Transportation Network as a Major Automated Information System (Acquisition Category IAM). The U.S. Transportation Command funds Global Transportation Network development, deployment, and operations and maintenance with its Transportation Working Capital Fund. Through FY 2005, Global Transportation Network costs will amount to $300 million. In addition, $211 million is programmed for FY 2002 through FY 2007 for system modernization.

Objective. The overall audit objective was to evaluate the acquisition management of the Global Transportation Network. Specifically, the audit determined whether the system was being cost-effectively acquired, monitored, tested, and prepared for deployment and system life-cycle support in accordance with DoD Directive 5000.1, "Defense Acquisition," October 23, 2000, and DoD Directive 5200.28, "Security Requirements for Automated Information Systems (AISs)," March 21, 1988. We also evaluated the management control program related to the objective. See Appendix A for a discussion of the audit scope and methodology and the review of the management control program.

Results. The U.S. Transportation Command cost-effectively acquired, monitored, tested, and prepared the Global Transportation Network for deployment and system life-cycle support in compliance with Office of Management and Budget and DoD guidance. It was able to obtain an information technology system that augmented its

mission-essential and mission-critical business processes as well as the needs of its customers within cost, schedule, and performance baselines. Further, the U.S. Transportation Command's management controls were adequate in that we identified no material management control weaknesses in its acquisition of the Global Transportation System.

Management Comments. We provided a draft of this report on June 18, 2001. Because this report contains no recommendations, no written response to this report was required, and none was received.

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Background

Global Transportation Network. The Global Transportation Network (GTN) is a U.S. Transportation Command (USTRANSCOM) information technology investment that augments the USTRANSCOM business process for managing and controlling in-transit assets. Further, it allows authorized users to monitor passengers, patients, forces, and cargo. The GTN receives and stores logistics data from more than 50 source systems with interface links to more than 100 secondary systems. In addition, GTN passes data to the Global Combat Support System, the Joint Total Asset Visibility System, and the Joint Operation Planning and Execution System. The GTN processes more than 2 million transactions per day, with data access to more than 6,000 registered users. The GTN achieved initial operating capability in April 1997.

System Configuration. The GTN is a central database system that is configured with web-based server access. Authorized users extract information from the GTN database and display it on desktop monitors or notebook computer screens. The GTN does not create new information from stored data. The classified and unclassified database servers reside at Scott Air Force Base, Illinois with back-ups at Robins Air Force Base, Georgia. Access to the classified servers is through the Secret Internet Protocol Router Network.[1]

Oversight and Management. The Assistant Secretary of Defense (Command, Control, Communication, and Intelligence) (ASD(C3I)) designated GTN as an acquisition category IAM Major Automated Information System.[2] The ASD(C3I) is also the milestone decision authority for the acquisition. Executive agent responsibility for GTN was assigned to the Air Force, and program management was assigned to the Chief Information Officer, USTRANSCOM. Lockheed Martin Mission Systems performs system integration, and the Program Management Office and USTRANSCOM perform information security services with support from MITRE Corporation. It should be noted that USTRANSCOM was recognized by the National Security Agency for excellence in the field of information system security. In 1998, USTRANSCOM received the Frank B. Rowlett Award for organizational achievement.

Funding. The USTRANSCOM funds GTN development, deployment, and operation and maintenance with its Transportation Working Capital Fund. Through FY 2005, GTN costs will amount to $300 million. In addition, $211 million is programmed for FY 2002 through FY 2007 for GTN modernization.

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[1] The Secret Internet Protocol Router Network is the DoD wide area network for transferring classified information between computer systems.

[2] Programs are defined as Acquisition Category IA automated information systems if costs for any single year exceed $32 million (FY 2000 constant dollars), total program cost exceeds $126 million, total life-cycle costs exceed $378 million, or if the Assistant Secretary of Defense (Command, Control, Communication, and Intelligence) designates them as Acquisition Category IA systems.

Objective

The overall audit objective was to evaluate the acquisition management of GTN. Specifically, the audit determined whether the system was being cost-effectively acquired, monitored, tested, and prepared for deployment and system life-cycle support in accordance with DoD Directive 5000.1, "Defense Acquisition," October 23, 2000, and DoD Directive 5200.28, "Security Requirements for Automated Information Systems (AISs)," March 21, 1988. We also evaluated the management control program related to the objective. See Appendix A for a discussion of the audit scope and methodology and the review of the management control program.

Acquisition Management of the Global Transportation Network

The U.S. Transportation Command cost-effectively acquired, monitored, tested, and prepared GTN for deployment and system life-cycle support in compliance with Office of Management and Budget and DoD guidance. This condition occurred because the GTN Program Management Office at the U.S. Transportation Command managed acquisition risks and applied management controls for the information technology investment. Further, the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) participated in management decisions affecting the investment's outcome. As a result, the U.S. Transportation Command obtained an information technology system that augmented its mission-essential and mission-critical business processes and the needs of its customers within cost, schedule, and performance baselines.

Mandatory Guidance

The Office of Management and Budget and the DoD provide managers with guidance for acquiring information technology investments and safeguarding information. Risks are mitigated when program offices comply with guidance, policies, and procedures. Management controls are also implemented for cost, schedule, performance, and information security. Appendix B describes the guidance as it relates to the GTN acquisition.

Risk Management and Management Controls

The USTRANSCOM deployed an operationally effective and suitable GTN by managing system acquisition risks and applying management controls. In compliance with Office of Management and Budget and DoD guidance, USTRANSCOM:

- involved users and testers,
- provided funding stability for the investment,
- staffed the acquisition with trained and experienced personnel,
- developed and operated a system prototype,
- applied and monitored security controls throughout the system's life cycle, and
- monitored the efficiency and effectiveness of program progress and results.

The Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) participated in management decisions affecting the information technology investment's outcome.

User and Tester Involvement. The GTN was a joint development and deployment effort within USTRANSCOM. Requirements were compiled and prioritized by the Directorate of Operations and Logistics. The requirements were also organized and refined by the Program Management Office and functional integrated product teams to determine best solutions. Further, planning and execution of the GTN test program was a combined effort of the Program Management Office, the contractors, the Air Force Operational Test and Evaluation Center, the Joint Interoperability Test Command, and the Air Force Information Warfare Center. As a result of involvement by system stakeholders, USTRANSCOM deployed an information technology system that satisfied operational requirements and specifications.

Funding Stability. Stable funding allowed the GTN system acquisition to progress without delays. Beginning in FY 2000 and extending through FY 2002, more than 39 percent of the capital budget for USTRANSCOM for externally developed software was budgeted for GTN. As a result of this financial commitment, GTN customers could depend on system improvements and enhancements.

Trained and Experienced Acquisition Personnel. The USTRANSCOM staffed the GTN Program Management Office with a trained and experienced workforce. Of the 20 individuals assigned to the GTN Program Management Office, 10 had either been certified as acquisition professionals[3] or had completed training to satisfy certification requirements. Further, the Program Management Office requested that USTRANSCOM expand the number of positions requiring certification. The actions taken by the Program Management Office enabled the GTN to obtain and sustain a highly qualified acquisition workforce.

Prototypes. The USTRANSCOM benefited from lessons learned from GTN prototype developments and deployments. The first GTN prototype, developed in 1990, reported information extracted from multiple database systems. When the GTN prototype was deployed in Southwest Asia for Operation Desert Shield, developers discovered that the prototype experienced technical problems when transferring and managing large volumes of data. As a result, a second prototype was developed during 1993 and 1994. This second prototype streamlined the data-gathering process by periodically receiving data from multiple sources and storing it in a central database for extraction by authorized users. Developers used the prototype to refine GTN requirements, determine technical capabilities needed to deliver requirements, and obtain user feedback. System prototyping enabled users and personnel in the Program Management Office to have a common understanding of business process requirements and an appreciation of technology alternatives and report presentations before the information technology investment proceeded to full-scale development.

[3] DoD issues Acquisition Professional Development Program Certifications to individuals meeting education, training, and experience standards in accordance with DoD Directive 5000.52-M, "Acquisition Career Development Program," November 22, 1995.

Information Security and Data Integrity. In October 2000, after complying with DoD guidance for information technology system certification and accreditation, USTRANSCOM granted GTN an information security approval to operate. Further, USTRANSCOM took additional steps to monitor the effectiveness and reliability of GTN information.

Security Effectiveness. When the Program Management Office submitted the GTN for information security accreditation, it requested a 1 year rather than a 3 year approval to operate. Despite quarterly Security Working Group meetings and tools installed for monitoring system security, the GTN Program Management Office believed that certification and accreditation would not be valid beyond 12 months due to the rapid rate that information technology changes. As a result, USTRANSCOM required an analysis of GTN security controls to be conducted each year to determine the need for recertification and reaccreditation as a condition for approval to operate.

Data Reliability. The GTN depends on reliable feeder system information for system effectiveness. Untimely and inaccurate data can compromise the quality of GTN information. Recognizing this vulnerability, the Program Management Office implemented edits for validating data and maintains daily metrics for monitoring rejection rates. However, edits cannot entirely eliminate invalid data. Untimely and inaccurate information can still populate the database.

Monitoring Program Progress and Results. The Program Management Office continually monitors program progress and results for the GTN system acquisition. By translating system requirements to system products and linking documentation to planning and budgeting cycles for life-cycle estimates, the Program Management Office developed baselines for measuring cost, schedule, and performance effectiveness and efficiency. As demonstrated by the quarterly Defense Acquisition Executive Summaries and monthly progress reports, the Program Management Office has integrated cost, schedule, and performance management controls into the acquisition process.

Office of Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) Oversight. From reviews of program status reports and documents, briefings, and budget submissions, the ASD(C3I) monitored GTN program progress and results. Also, the ASD(C3I) offered constructive suggestions when USTRANSCOM coordinated GTN program decisions. Although the USTRANSCOM initially programmed the GTN modernization as a major modification to the existing system, the ASD(C3I) believed the documentation supporting the modernization could qualify the GTN as a new information technology investment.

After discussions and briefings, the ASD(C3I) and USTRANSCOM jointly agreed to ask for additional review by the Under Secretary of Defense (Comptroller)[4]. The Comptroller determined that the modernization was a new acquisition, and USTRANSCOM revised its FY 2002 budget submission to reflect the change.

Conclusion

USTRANSCOM cost-effectively acquired, monitored, tested, and prepared GTN for deployment and system life-cycle support by managing risks and applying management controls in compliance with Office of Management and Budget and DoD guidance. As a result, USTRANSCOM can better plan and manage movements of resources to and from areas of national and international interests and GTN authorized users can better monitor movements of resources affecting the readiness of missions. Therefore, because the GTN information technology investment met user requirements within cost, schedule, and performance baselines, no report recommendations are being made.

[4]DoD Regulation 7000.14-R, "DoD Financial Management Regulation," August 2000, requires that DoD Components coordinate new starts for system acquisitions with the Office of Under Secretary of Defense (Comptroller).

Appendix A. Audit Process

Scope

Work Performed. We conducted this program audit from January through May 2001 and reviewed documentation dated from June 1992 through May 2001. To accomplish the audit objective, we:

- Interviewed officials and obtained documentation from the offices of ASD(C3I), the Air Force Program Executive Office for Command and Control and Combat Support Systems, Headquarters USTRANSCOM, the GTN Program Management Office, and contractor personnel.
- Reviewed available documents related to program requirements, definition, assessments, and development; decision reviews; program status reporting; information system security; and oversight.
- Evaluated the adequacy of management controls related to the acquisition of GTN information technology investment.

DoD-Wide Corporate Level Government Performance and Results Act Coverage. In response to the Government Performance and Results Act, the Secretary of Defense annually establishes DoD-wide corporate level goals, subordinate performance goals, and performance measures. This report pertains to achievement of the following goal, subordinate performance goal, and performance measure:

> **FY 2001 DoD Corporate Level Goal 2**: Prepare now for an uncertain future by pursuing a focused modernization effort that maintains U.S. qualitative superiority in key warfighting capabilities. Transform the force by exploiting the Revolution in Military Affairs, and reengineer the Department to achieve a 21st century infrastructure. **(01-DoD-2)**
>
> **FY 2001 Subordinate Performance Goal 2.5:** Improve DoD financial and information management. **(01-DoD-2.5)**
>
> **Performance Measure 2.5.3:** Qualitative Assessment of Reforming Information Technology Management. **(01-DoD-2.5.3)**

DoD Functional Area Reform Goals. Most major DoD functional areas have performance improvement reform objectives and goals. This report pertains to achievement of the following functional area objectives and goals:

Information Management Functional Area.

- **Objective.** Provide services that satisfy customer information needs.

  Goal. Introduce new paradigms. **(IM-2.4)**

- **Objective.** Reform information technology management processes to increase efficiency and mission contribution.

  Goal. Institutionalize Clinger-Cohen Act of 1996 provisions. **(IM-3.1)**

  Goal. Institute fundamental information technology management reform efforts. **(IM-3.2)**

Logistics Functional Area.

- **Objective.** Improve strategic mobility to meet warfighter requirements.

  Goal. Develop a measurement plan and goals for mobility infrastructure and mobility process improvements by the end of FY 2001. Achieve those goals by the end of FY 2006. Both the plan and the goals have been deferred pending publication of MRS-05. **(LOG 2.2)**

- **Objective.** Implement Customer Wait Time as the DoD logistics metric.

  Goal. Develop the process for definition and measurement of Customer Wait Time by the end of FY 2001. **(LOG-3.1)**

  Goal. Fully implement Customer Wait Time measurement for 100 percent of all selected segments by the end of FY 2006. **(LOG-3.2)**

General Accounting Office High-Risk Area. The General Accounting Office identified several high-risk areas in the DoD. This report provides coverage of the Information Security and DoD Systems Modernization high-risk areas.

Methodology

We conducted this program audit in accordance with auditing standards issued by the Comptroller of the United States, as implemented by the Inspector General, DoD. Accordingly, we included tests of management controls considered necessary. We did not use computer-processed information to perform this audit. We comply with Government Auditing Standards except for the requirement for an external quality control review. Measures have been taken to obtain an external quality control review.

Contacts During the Audit. We contacted individuals and organizations within and outside DoD. Further details are available upon request.

Management Control Program Review

DoD Directive 5010.38, "Management Control (MC) Program," August 26, 1996, and DoD Instruction 5010.40, "Management Control (MC) Program Procedures," August 28, 1996, require DoD organizations to implement a comprehensive system of management controls. The controls provide reasonable assurance that programs are operating as intended and to evaluate the adequacy of the controls.

Scope of the Review of the Management Control Program. In accordance with DoD Directive 5000.1, DoD Instruction 5000.2, "Operation of the Defense Acquisition System," October 23, 2000, and DoD Regulation 5000.2-R, "Mandatory Procedures for Major Defense Acquisition Programs (MDAPs) and Major Automated Information System (MAIS) Acquisition Programs," March 15, 1996 (subsequently revised on January 4, 2001), acquisition managers are to apply program cost, schedule, and performance parameters to control objectives for implementing DoD Directive 5010.38 requirements. Accordingly, we limited our review to management controls directly related to the acquisition management and information security of the GTN and not to USTRANSCOM's self-evaluation of management controls for the Defense Transportation System.

Adequacy of the Management Controls. Management controls for the GTN information technology investment were adequate in that we identified no material management control weaknesses.

Prior Coverage

During the last 5 years, no reports addressing the GTN information technology investment were issued.

Appendix B. Mandatory Guidance

The Office of Management and Budget and DoD provide managers with guidance for managing risk and implementing management controls for acquiring information technology investments and safeguarding information assets.

Office of Management and Budget Guidance

Office of Management and Budget Circular No. A-130, "Management of Federal Information Resources," November 30, 2000, implements numerous public laws and other Office of Management and Budget guidance that address acquisition of information technology investments and security of system stored information and software applications. In accordance with the Cohen-Clinger Act of 1996, the Circular requires that:

- Cost benefit analyses be prepared for each system throughout its life cycle.
- Risks be reduced by fully testing and prototyping system components prior to deployment, and involving users in the capital planning process.
- Performance measures be implemented to provide timely information on the progress of an information technology program in terms of cost and capability to meet specified requirements, timeliness, and quality.

Further, the Circular also requires management controls for safeguarding information assets. Those controls include:

- the development of security plans for all systems,
- a security control assessment by a management official before a system processes information, and
- periodic security reviews to determine the effectiveness of controls.

DoD Guidance

DoD Directive 5000.1. DoD Directive 5000.1, "Defense Acquisition," October 23, 2000, establishes a disciplined life-cycle management approach for acquiring quality products. DoD Directive 5000.1 emphasizes the need to recognize fiscal constraint and requires acquisition managers to work with users to trade off performance and schedule with available funding. Additionally, DoD Directive 5000.1 requires DoD Components to maximize program stability by developing realistic program schedules, investment plans, and affordability assessments.

DoD Directive 5200.28. DoD Directive 5200.28, "Security Requirements for Automated Information Systems (AISs)," March 21, 1988, provides mandatory guidance for safeguarding classified and sensitive unclassified information. It implements the security safeguard provisions of Office of Management and Budget Circular A-130. It is also a reference source for DoD Instruction 5200.40, "DoD Information Technology Security Certification and Accreditation Process (DITSCAP)," December 30, 1997.

DoD Directive 8000.1. DoD Directive 8000.1. "Defense Information Management (IM) Program," October 27, 1992, establishes policy and assigns responsibilities for the collection, creation, use, dissemination, and disposition of all data and information within DoD. In addition, DoD Directive 8000.1 defines information security, integrity and survivability as basic to DoD missions. Also, DoD Directive 8000.1 requires a disciplined life-cycle approach to manage information systems.

DoD Instruction 5000.2. DoD Instruction 5000.2, "Operation of the Defense Acquisition System," Change 1, January 4, 2001, establishes a general approach for managing system acquisitions with best life-cycle solutions for satisfying user requirements. DoD Instruction 5000.2 requires chief information officers to confirm that mission-critical and -essential information systems are developed in accordance with the Clinger-Cohen Act of 1996 before approvals are granted for milestone advancements.

DoD Regulation 5000.2-R. Interim DoD Regulation 5000.2-R, "Mandatory Procedures for Major Defense Acquisition Programs (MDAPs) and Major Automated Information System (MAIS) Acquisition Programs," January 4, 2001, establishes life-cycle procedures for managing major acquisition programs.

Appendix C. Report Distribution

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